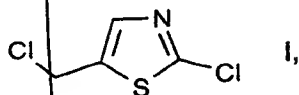


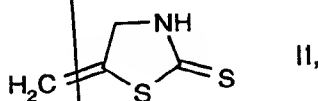
## WHAT IS CLAIMED IS:

1. A process for preparing the compound of the formula



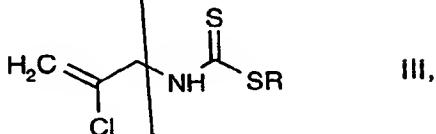
which comprises

- a) reacting the known compound of the formula



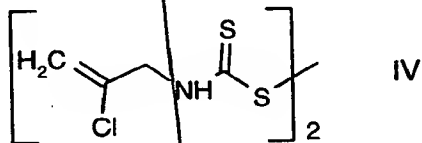
in free form or in salt form, with a chlorinating agent, or

- b) reacting a compound of the formula



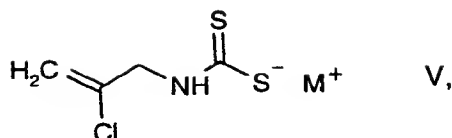
which is known or can be prepared by methods known per se and in which R is C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>3</sub>-C<sub>6</sub>cycloalkyl or an unsubstituted or mono- to pentasubstituted aryl or aryl-C<sub>1</sub>-C<sub>4</sub>alkyl group, where the substituents are selected from the group consisting of halogen and C<sub>1</sub>-C<sub>4</sub>alkyl, with a chlorinating agent, or

- c) reacting the compound of the formula



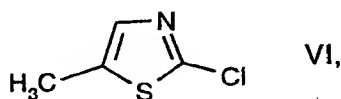
with a chlorinating agent, or

- d) reacting a compound of the formula



which is known or can be prepared by methods known per se and in which  $\text{M}^+$  is an alkali metal ion, one equivalent of an alkaline earth metal ion or is a nonalkylated ammonium ion or an ammonium ion which is alkylated with from one to four identical or different alkyl radicals, and is preferably a potassium ion or, in particular, a sodium ion, with a chlorinating agent, or

e) reacting the compound of the formula



which is known, in the presence or absence of a free-radical catalyst, with a chlorinating agent, or

f1) first reacting the compound of the formula II or the compound 2-mercapto-5-methyl-thiazole, in each case in free form or in salt form, with a chlorinating agent, and

f2) subjecting the compound of the formula VI which is obtainable in this way to further reaction, with or without isolating it, with a chlorinating agent in accordance with variant e), or

g) subjecting a compound of the formula V either

g1.1) first to treatment with a base and

g1.2) the compound of the formula II thus obtainable, in free form or in salt form, with or without isolating it, to further reaction with a chlorinating agent in accordance with variant a) or in accordance with variant f1/f2), or

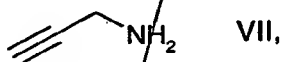
g2.1) first to reaction with a compound of the formula  $\text{RX}$ , which is known or can be prepared by methods known per se and in which  $\text{R}$  is as defined for the formula III and  $\text{X}$  is a leaving group, and

g2.2) the compound of the formula III thus obtainable, with or without isolating it, to further reaction with a chlorinating agent in accordance with variant b), or

g3.1) first of all to reaction with an oxidizing agent, in the presence or absence of a base, and

g3.2) the compound of the formula IV thus obtainable, with or without isolating it, to further reaction with a chlorinating agent in accordance with variant c), or

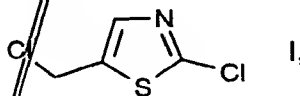
h1) reacting the compound of the formula



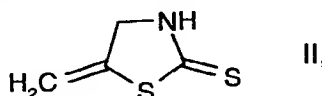
which is known, first of all with carbon disulfide, in the presence or absence of a base, and

h2) further reacting the compound of the formula II thus obtainable, in free form or in salt form, with or without isolating it, with a chlorinating agent in accordance with variant a) or in accordance with variant f1/f2).

2. A process according to claim 1 for preparing the compound of the formula



which comprises reacting the compound of the formula



in free form or in salt form, with a chlorinating agent.

3. A process according to claim 2, wherein the chlorinating agent is selected from the group consisting of elemental chlorine, Javelle water, N-chlorosuccinimide, phosphorus trichloride, phosphorus pentachloride, sulfuryl chloride, thionyl chloride and mixtures of two or more of these compounds.

4. A process according to claim 3, wherein the chlorinating agent is selected from the group consisting of elemental chlorine, sulfuryl chloride and a mixture of these two compounds.

5. A process according to claim 4, wherein the chlorinating agent is sulfuryl chloride.

6. A process according to claim 2, wherein the solvent is selected from the group consisting of water, strong organic carboxylic acids, aromatic, aliphatic and alicyclic hydrocarbons and halogenated hydrocarbons, and mixtures of these solvents.

7. A process according to claim 6, wherein the solvent is selected from the group consisting of water, formic acid, acetic acid, propionic acid, benzene, toluene, xylene, mesitylene, tetralin, chlorobenzene, dichlorobenzene, bromobenzene, petroleum ether, hexane, cyclohexane, dichloromethane, trichloromethane, tetrachloromethane, dichloroethane, trichloroethene and tetrachloroethene, and mixtures of these solvents.

8. A process according to claim 7, wherein the solvent is selected from the group consisting of water, formic acid, acetic acid, dichloromethane, trichloromethane, tetrachloromethane and dichloroethane, and mixtures of these solvents.

9. A process according to claim 8, wherein the solvent is a mixture of water and dichloromethane.

10. A process according to claim 9, wherein the weight ratio of dichloromethane to water is from about 5 to about 50.

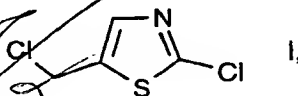
11. A process according to claim 10, wherein the weight ratio of dichloromethane to water is about 10 to about 30.

12. A process according to claim 2, wherein the reaction is carried out at from about -10°C to about +40°C.

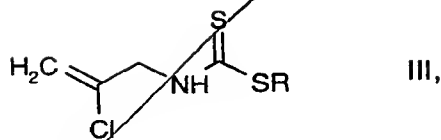
13. A process according to claim 2, wherein the reaction period is from about 0.1 to about 4 hours.

14. A process according to claim 13, wherein the reaction period is from about 0.5 to about 1.5 hours.

15. A process according to claim 1 for preparing the compound of the formula



which comprises reacting a compound of the formula



in which R is as defined in claim 1, with a chlorinating agent.

16. A process according to claim 15, wherein the chlorinating agent is selected from the group consisting of elemental chlorine, Javelle water, N-chlorosuccinimide, phosphorus trichloride, phosphorus pentachloride, sulfuryl chloride, thionyl chloride and mixtures of two or more of these compounds.

17. A process according to claim 16, wherein the chlorinating agent is selected from the group consisting of elemental chlorine, sulfuryl chloride and a mixture of these two compounds.

18. A process according to claim 17, wherein the chlorinating agent is sulfuryl chloride.

19. A process according to claim 15, wherein the solvent is selected from the group consisting of water, strong organic carboxylic acids, aromatic, aliphatic and alicyclic hydrocarbons and halogenated hydrocarbons, and mixtures of these solvents.

20. A process according to claim 19, wherein the solvent is selected from the group consisting of water, formic acid, acetic acid, propionic acid, benzene, toluene, xylene, mesitylene, tetralin, chlorobenzene, dichlorobenzene, bromobenzene, petroleum ether, hexane, cyclohexane, dichloromethane, trichloromethane, tetrachloromethane, dichloroethane, trichloroethene and tetrachloroethene, and mixtures of these solvents.

21. A process according to claim 20, wherein the solvent is selected from the group consisting of water, formic acid, acetic acid, dichloromethane, trichloromethane, tetrachloromethane and dichloroethane, and mixtures of these solvents.

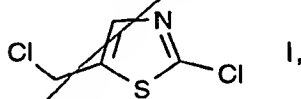
22. A process according to claim 21, wherein the solvent is dichloromethane.

23. A process according to claim 15, wherein the reaction is carried out at from about -10°C to about +40°C.

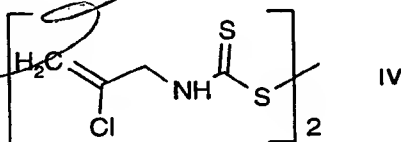
24. A process according to claim 15, wherein the reaction period is from about 1 to about 48 hours.

25. A process according to claim 24, wherein the reaction period is from about 12 to about 24 hours.

26. A process according to claim 1 for preparing the compound of the formula



which comprises reacting a compound of the formula



with a chlorinating agent.

27. A process according to claim 26, wherein the chlorinating agent is selected from the group consisting of elemental chlorine, Javelle water, N-chlorosuccinimide, phosphorus trichloride, phosphorus pentachloride, sulfuryl chloride, thionyl chloride and mixtures of two or more of these compounds.

28. A process according to claim 27, wherein the chlorinating agent is selected from the group consisting of elemental chlorine, sulfuryl chloride and a mixture of these two compounds.

29. A process according to claim 28, wherein the chlorinating agent is sulfuryl chloride.

30. A process according to claim 26, wherein the solvent is selected from the group consisting of water, strong organic carboxylic acids, aromatic, aliphatic and alicyclic hydrocarbons and halogenated hydrocarbons, and mixtures of these solvents.

31. A process according to claim 30, wherein the solvent is selected from the group consisting of water, formic acid, acetic acid, propionic acid, benzene, toluene, xylene, mesitylene, tetralin, chlorobenzene, dichlorobenzene, bromobenzene, petroleum ether, hexane, cyclohexane, dichloromethane, trichloromethane, tetrachloromethane, dichloroethane, trichloroethene and tetrachloroethene, and mixtures of these solvents.

32. A process according to claim 31, wherein the solvent is selected from the group consisting of water, formic acid, acetic acid, dichloromethane, trichloromethane, tetrachloromethane and dichloroethane, and mixtures of these solvents.

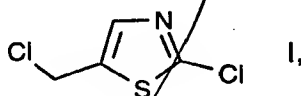
33. A process according to claim 32, wherein the solvent is dichloromethane.

34. A process according to claim 26, wherein the reaction is carried out at from about  $-10^{\circ}\text{C}$  to about  $+40^{\circ}\text{C}$ .

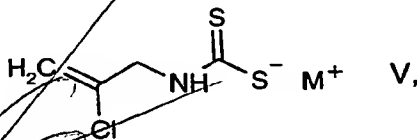
35. A process according to claim 26, wherein the reaction period is from about 1 to about 48 hours.

36. A process according to claim 35, wherein the reaction period is from about 12 to about 24 hours.

37. A process according to claim 1 for preparing the compound of the formula



which comprises reacting a compound of the formula



in which  $\text{M}^+$  is as defined in claim 1, with a chlorinating agent.

38. A process according to claim 37, wherein the chlorinating agent is selected from the group consisting of elemental chlorine, Javelle water, N-chlorosuccinimide, phosphorus trichloride, phosphorus pentachloride, sulfuryl chloride, thionyl chloride and mixtures of two or more of these compounds.

39. A process according to claim 38, wherein the chlorinating agent is selected from the group consisting of elemental chlorine, sulfuryl chloride and a mixture of these two compounds.

40. A process according to claim 39, wherein the chlorinating agent is sulfuryl chloride.

41. A process according to claim 37, wherein the solvent is selected from the group consisting of water, strong organic carboxylic acids, aromatic, aliphatic and alicyclic hydrocarbons and halogenated hydrocarbons, and mixtures of these solvents.

42. A process according to claim 41, wherein the solvent is selected from the group consisting of water, formic acid, acetic acid, propionic acid, benzene, toluene, xylene, mesitylene, tetralin, chlorobenzene, dichlorobenzene, bromobenzene, petroleum ether,

hexane, cyclohexane, dichloromethane, trichloromethane, tetrachloromethane, dichloroethane, trichloroethene and tetrachloroethene, and mixtures of these solvents.

43. A process according to claim 42, wherein the solvent is selected from the group consisting of water, formic acid, acetic acid, dichloromethane, trichloromethane, tetrachloromethane and dichloroethane, and mixtures of these solvents.

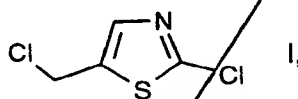
44. A process according to claim 43, wherein the solvent is dichloromethane.

45. A process according to claim 37, wherein the reaction is carried out at from about  $-10^{\circ}\text{C}$  to about  $+40^{\circ}\text{C}$ .

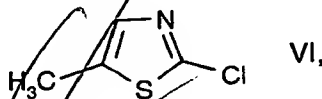
46. A process according to claim 37, wherein the reaction period is from about 1 to about 48 hours.

47. A process according to claim 46, wherein the reaction period is from about 12 to about 24 hours.

48. A process according to claim 1 for preparing the compound of the formula



which comprises reacting the compound of the formula



with a chlorinating agent.

49. A process according to claim 48, wherein the chlorinating agent is selected from the group consisting of elemental chlorine, Javelle water, N-chlorosuccinimide, phosphorus trichloride, phosphorus pentachloride, sulfonyl chloride, thionyl chloride and mixtures of two or more of these compounds.

50. A process according to claim 49, wherein the chlorinating agent is N-chlorosuccinimide.

51. A process according to claim 48, wherein the solvent is selected from the group consisting of water, strong organic carboxylic acids, aromatic, aliphatic and alicyclic hydrocarbons and halogenated hydrocarbons, and mixtures of these solvents.



52. A process according to claim 51, wherein the solvent is selected from the group consisting of water, formic acid, acetic acid, propionic acid, benzene, toluene, xylene, mesitylene, tetralin, chlorobenzene, dichlorobenzene, bromobenzene, petroleum ether, hexane, cyclohexane, dichloromethane, trichloromethane, tetrachloromethane, dichloroethane, trichloroethene and tetrachloroethene, and mixtures of these solvents.

53. A process according to claim 52, wherein the solvent is selected from the group consisting of water, formic acid, acetic acid, dichloromethane, trichloromethane, tetrachloromethane and dichloroethane, and mixtures of these solvents.

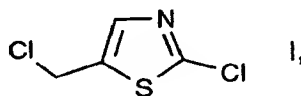
54. A process according to claim 53, wherein the solvent is tetrachloromethane.

55. A process according to claim 48, wherein the reaction is carried out at from about 20°C to about +80°C.

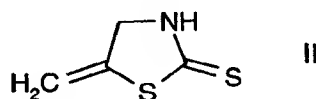
56. A process according to claim 48, wherein the reaction period is from about 1 to about 120 hours.

57. A process according to claim 56, wherein the reaction period is from about 48 to about 96 hours.

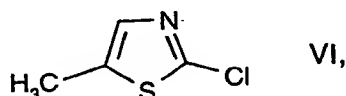
58. A process according to claim 1 for the preparation of the compound of the formula



which comprises first reacting the compound of the formula



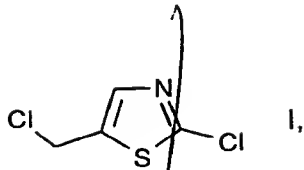
or the compound 2-mercapto-5-methyl-thiazole, in each case in free form or in salt form, with a chlorinating agent and further reacting the compound thus obtainable, of the formula



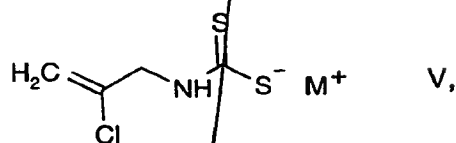
with or without isolating it, with a chlorinating agent.

59. A process according to claim 1 for the preparation of the compound of the formula

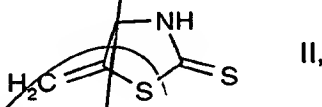
- 27 -



which comprises treating a compound of the formula

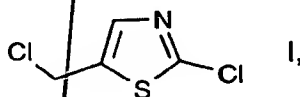


in which  $M^+$  is as defined in claim 1, with a base and further reacting the compound thus obtainable, of the formula

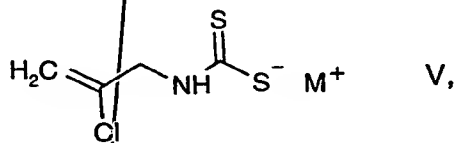


in free form or in salt form and with or without isolating it, with a chlorinating agent.

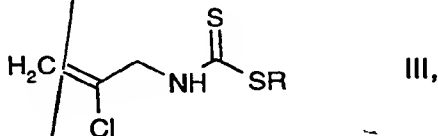
60. A process according to claim 1 for the preparation of the compound of the formula



which comprises reacting a compound of the formula

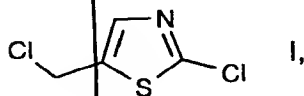


in which  $M^+$  is as defined in claim 1, with a compound of the formula  $RX$ , in which  $R$  is as defined in claim 1 for the formula III and  $X$  is a leaving group, and further reacting the compound thus obtainable, of the formula

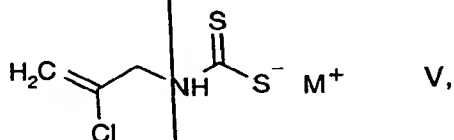


in which R is as defined in claim 1, with or without isolating it, with a chlorinating agent.

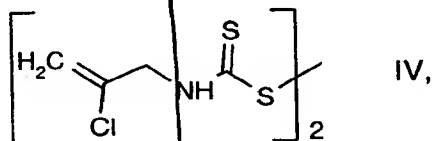
61. A process according to claim 1 for the preparation of the compound of the formula



which comprises reacting a compound of the formula

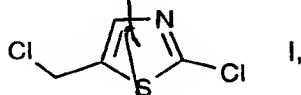


in which  $M^+$  is as defined in claim 1, with an oxidizing agent, in the presence or absence of a base, and further reacting the compound thus obtainable, of the formula

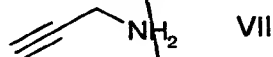


with or without isolating it, with a chlorinating agent.

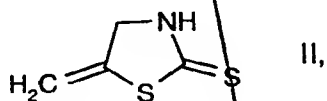
62. A process according to claim 1 for the preparation of a compound of the formula



which comprises reacting the compound of the formula

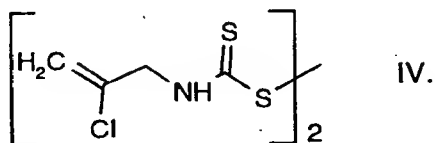


with carbon disulfide, in the presence or absence of a base, and further reacting the compound thus obtainable, of the formula

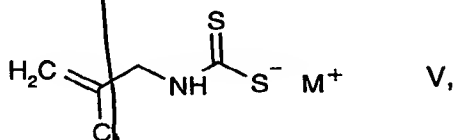


in free form or in salt form and with or without isolating it, with a chlorinating agent.

63. The compound of the formula



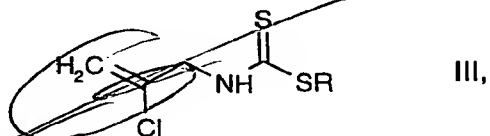
64. A process for the preparation of the compound according to claim 63, of the formula IV, which comprises reacting a compound of the formula



in which  $\text{M}^+$  is as defined in claim 1, with an oxidizing agent, in the presence or absence of a base.

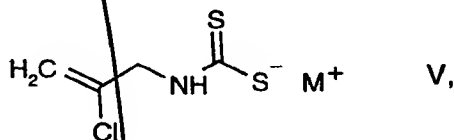
65. The use of the compound according to claim 63, of the formula IV, in a process according to any one of claims 1, 26 to 36 and 61.

66. A compound of the formula



in which R is as defined in claim 1.

67. A process for the preparation of a compound according to claim 66, of the formula III, which comprises reacting a compound of the formula



in which  $\text{M}^+$  is as defined in claim 1, with a compound of the formula  $\text{RX}$ , in which R is as defined in claim 1 for the formula III and X is a leaving group.

add C'